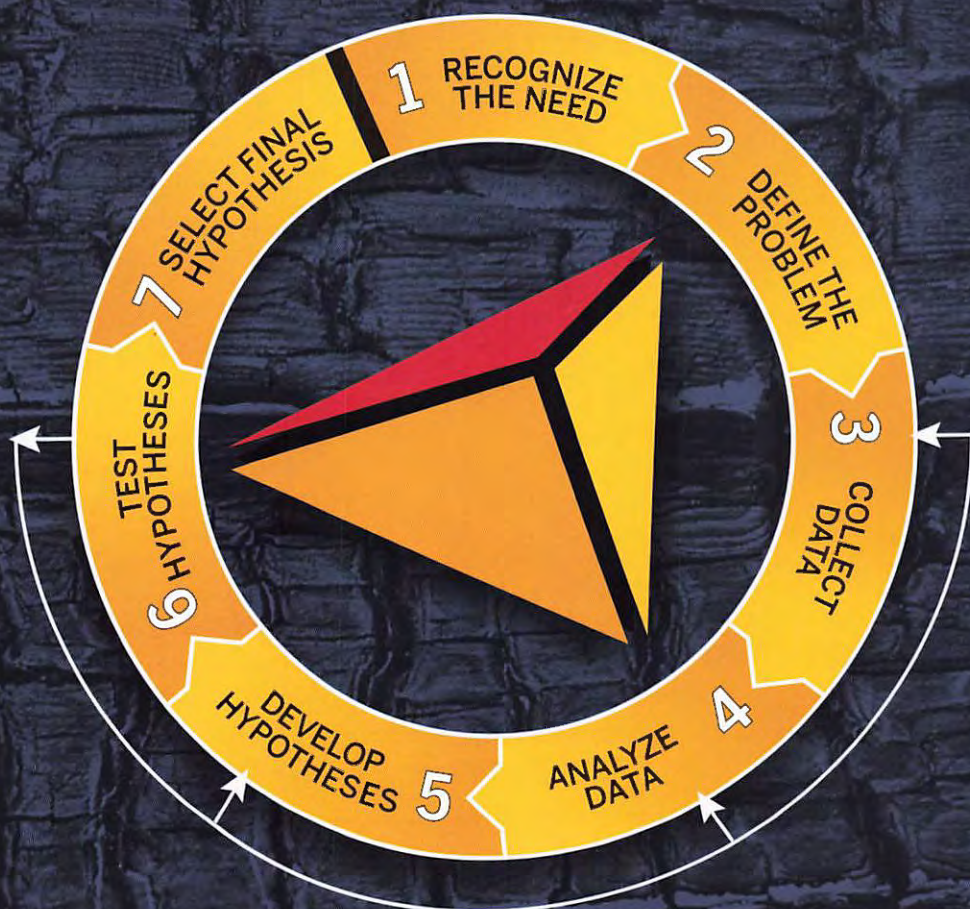


# EXHIBIT 13

# NFPA<sup>®</sup> 921

## Guide for Fire and Explosion Investigations

2021



only nonmandatory provisions using the word “should” to indicate recommendations in the body of the text.

**3.2.5\* Standard.** An NFPA Standard, the main text of which contains only mandatory provisions using the word “shall” to indicate requirements and that is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions are not to be considered a part of the requirements of a standard and shall be located in an appendix, annex, footnote, informational note, or other means as permitted in the *NFPA Manual of Style*. When used in a generic sense, such as in the phrase “standards development process” or “standards development activities,” the term “standards” includes all NFPA Standards, including Codes, Standards, Recommended Practices, and Guides.

### 3.3 General Definitions.

**3.3.1\* Absolute Temperature.** A temperature measured in Kelvins (K) or Rankines (R).

**3.3.2 Accelerant.** A fuel or oxidizer, often an ignitable liquid, intentionally used to initiate a fire or increase the rate of growth or spread of fire.

**3.3.3 Accident.** An unplanned event that interrupts an activity and sometimes causes injury or damage or a chance occurrence arising from unknown causes; an unexpected happening due to carelessness, ignorance, and the like.

**3.3.4 Active Fire Protection System.** A system that uses moving mechanical or electrical parts to achieve a fire protection goal. [3, 2018]

**3.3.5 Ambient.** Someone's or something's surroundings, especially as they pertain to the local environment; for example, ambient air and ambient temperature.

**3.3.6 Ampacity.** The maximum current, in amperes, that a conductor can carry continuously under the conditions of use without exceeding its temperature rating. [70, Article 100]

**3.3.7 Ampere.** The unit of electric current that is equivalent to a flow of one coulomb per second; one coulomb is defined as  $6.24 \times 10^{18}$  electrons.

**3.3.8 Arc.** A high-temperature luminous electric discharge across a gap or through a medium such as charred insulation.

**3.3.9 Arc Mapping.** Identifying and documenting a fire pattern derived from the identification of arc sites used to aid in determining the area of fire origin or spread.

**N 3.3.10 Arc Melting.** Melting of conductors and conducting surfaces as a result of electrical arcing. The characteristics of arc melting are described in 9.11.1.1.

**3.3.11 Arc Site.** The location on a conductor with localized damage that resulted from an electrical arc.

**3.3.12 Arcing Through Char.** Arcing associated with a matrix of charred material (e.g., charred conductor insulation) that acts as a semiconductive medium.

**3.3.13 Area of Origin.** A structure, part of a structure, or general geographic location within a fire scene, in which the “point of origin” of a fire or explosion is reasonably believed to be located. (See also 3.3.149, *Point of Origin*.)

**3.3.14 Arrow Pattern.** A fire pattern displayed on the cross-section of a burned wooden structural member.

**3.3.15 Arson.** The crime of maliciously and intentionally, or recklessly, starting a fire or causing an explosion.

**3.3.16 Autoignition.** Initiation of combustion by heat but without a spark or flame.

**3.3.17 Autoignition Temperature.** The lowest temperature at which a combustible material ignites in air without a spark or flame.

**3.3.18 Backdraft.** A deflagration resulting from the sudden introduction of air into a confined space containing oxygen-deficient products of incomplete combustion.

**3.3.19 Bead.** A rounded mass of resolidified metal on the end of the remains of an electrical conductor or conductors that was caused by arcing and is characterized by a sharp line of demarcation between the melted and unmelted conductor surfaces.

**3.3.20 Blast Pressure Front.** The expanding leading edge of an explosion reaction that separates a major difference in pressure between normal ambient pressure ahead of the front and potentially damaging high pressure at and behind the front.

**3.3.21 BLEVE.** Boiling liquid expanding vapor explosion.

**3.3.22 Bonding.** The permanent joining of metallic parts to form an electrically conductive path that ensures electrical continuity and the capacity to conduct safely any current likely to be imposed.

**3.3.23 British Thermal Unit (Btu).** The quantity of heat required to raise the temperature of one pound of water 1°F at the pressure of 1 atmosphere and temperature of 60°F; a British thermal unit is equal to 1055 joules, 1.055 kilojoules, and 252.15 calories.

**3.3.24 Burning Rate.** See 3.3.110, Heat Release Rate (HRR).

**3.3.25\* Calcination of Gypsum.** A fire effect realized in gypsum products, including wallboard, as a result of exposure to heat that drives off free and chemically bound water.

**3.3.26 Calorie.** The amount of heat necessary to raise 1 gram of water 1°C at the pressure of 1 atmosphere and temperature of 15°C; a calorie is 4.184 joules, and there are 252.15 calories in a British thermal unit (Btu).

**Δ 3.3.27 Cause.** The circumstances, conditions, or agencies that brought about or resulted in the fire or explosion incident, damage to property, bodily injury, or loss of life.

**3.3.28 Ceiling Jet.** A relatively thin layer of flowing hot gases that develops under a horizontal surface (e.g., ceiling) as a result of plume impingement and the flowing gas being forced to move horizontally.

**3.3.29 Char.** Carbonaceous material that has been burned or pyrolyzed and has a blackened appearance.

**3.3.30 Char Blisters.** Convex segments of carbonized material separated by cracks or crevasses that form on the surface of char, forming on materials such as wood as the result of pyrolysis or burning.

**Δ 3.3.31 Clean Burn.** A distinct and visible fire effect generally apparent on noncombustible surfaces after combustible layer(s) (such as soot, paint, and paper) have been burned away.